Kansas Nonpoint Source Pollution Management Plan – 2000 Update

Addressing the Nine Key Elements required for effective state nonpoint source pollution control programs.

Kansas Department of Health & Environment
Bureau of Water - Nonpoint Source Section
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December 2000

KANSAS
DEPARTMENT OF HEALTH & ENVIRONMENT
BILL GRAVES, GOVERNOR
Clyde D. Graeber, Secretary

November 5, 2001

Dear Friend of Clean Water:

The Updated ***Kansas Nonpoint Source Pollution Management Plan*** was prepared pursuant to Section 319 of the federal Clean Water Act. The plan was and approved by the United States Environmental Protection Agency, March 19, 2001. Kansas is eligible to receive Federal Nonpoint Source Pollution Control Grants appropriated annually under the provisions of Section 319(h).

The overall purpose of this document is to describe actions and strategies needed to ***assure that Kansas' water resources are free of pollution caused by nonpoint pollutant sources***. Highlights of the plan include–

✓ Water quality restoration and protection targets for each HUC 8 watershed in Kansas (Appendix B)

✓ Schedule for developing and implementing restoration and protection plans for each HUC 8 watershed (Appendix E)

✓ Water quality protection expectations for Kansas' nonpoint pollutant sources (Appendix I)

✓ Summary of responsibilities of agencies and organizations in Kansas (Appendix J)

It is our intention to update and revise this document as new information or strategies are developed. To help us keep you informed of changes that are made, please complete and return the lower part of this letter. Thank you.

Sincerely,

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I wish to be informed of revisions and updates to the Kansas Nonpoint Source Pollution Management Plan - Approved March, 2001.

Name (Title) _____

Agency: _____

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City, State, Zip _____

E-mail Address _____

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Summary & Overview

In 1972, the United States Congress passed amendments to the federal Water Pollution Control Act, referred to at the time as PL 92-500. This legislation set the nation on a course to clean-up the nation's water resources. In the 28 years since passage of PL 92-500 the statute has been amended several times and is now known as the Clean Water Act. In 1972, control of pollutants discharged from cities, industries and large animal feedlots were the priority. These pollutant sources, referred to as point sources are required to have a National Pollutant Discharge Elimination System (NPDES) permit and have for the most part implemented the pollution control requirements stipulated by the conditions of the NPDES permit. While control of pollutants discharged from point sources has resulted in substantial improvement in the quality of lakes and rivers, many lakes and rivers still suffer from pollution problems. These remaining pollution problems are mainly caused by nonpoint pollutant sources.

Kansas Water Quality

Surface Water - widespread impacts due to

- ✓ ***Fecal coliform bacteria***
- ✓ ***Atrazine***
- ✓ ***Total Suspended Solids***
- ✓ ***Biochemical Oxygen Demand***
- ✓ ***Phosphorus***
- ✓ ***Nitrogen***

Groundwater-local impacts due to

- ✓ ***Nitrates***
- ✓ ***Atrazine***
- ✓ ***MTBE***
- ✓ ***Selenium***

A nonpoint pollutant source is any source of pollutants that is not required to have an NPDES discharge permit. While precipitation runoff from the land surface is the most commonly thought of nonpoint pollutant source, spills and leaks from motor vehicles and machinery, atmospheric deposition or fall-out, and failing on-site wastewater treatment systems are other nonpoint pollutant sources. In fact virtually everything we do for work or pleasure can be a nonpoint pollutant source.

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In 1987, Congress recognizing that nonpoint source pollution was the nation's largest remaining water pollution problem, established a national policy to address nonpoint pollution.

> ***National Policy***
>
> ***It is the national policy that programs for the control of nonpoint sources of pollution be developed and implemented in an expeditious manner so as to enable the goals of this Act to be met through the control of both point and nonpoint sources of pollution - Clean Water Act Section 101(a)(7).***

Congress also established Section 319 of the Clean Water Act, "Nonpoint Source Management Programs." Section 319(h) is the grant program designed to assist states implement policy and programs for the control of nonpoint source pollution. To be eligible to receive these grants, states were required to prepare a nonpoint source management program which (1) identifies the best management practices and measures needed to reduce nonpoint source pollutant loadings, (2) identifies the programs to be used to achieve implementation of the identified best management practices, and (3) an implementation schedule. The Kansas Nonpoint Source Management Plan was approved by EPA in 1989.

In 1996 the states and the United States Environmental Protection Agency cooperatively developed a set of criteria for upgrading state nonpoint source management programs. The criteria known as the "Nine Key Elements" are intended to increase the capacity of states to address nonpoint source pollution. State nonpoint source management programs were to be revised and upgraded to meet the "Nine Key Elements".

This document is Kansas' response to the need to address the Nine Key Elements. It is also intended to reflect changes in the Kansas nonpoint source pollution control program that have occurred since the original 1989 management plan.

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Summary & Overview

> ***Kansas Vision***
>
> *All nonpoint pollutant sources are implementing water quality protection measures so that* ***Kansas' lakes, rivers, wetlands and groundwater will be free of pollution caused by nonpoint pollutant sources.***

The Kansas vision will be achieved through the use of information and education programs and activities, technical assistance, demonstration projects and enforcement where a particular nonpoint pollutant source category (such as on-site wastewater treatment systems) is subject to mandatory requirements. It is also Kansas' intention to pursue implementation of nonpoint source pollution control measures on a priority watershed basis. Administration of the nonpoint source pollution control program is through a collaborative partnership of state, local and federal governmental agencies and private sector organizations and individuals.

✓ *Priority Water Resources*

While it is Kansas' goal that all nonpoint pollutant sources will implement water quality protection measures, it is expected that at least 30 years will be required to achieve this goal. To assure that water resources important to the health and welfare of Kansas' citizens, visitors, plants and animals nonpoint source pollution control and management resources will be guided by the following priorities –

- ✗ Public water supply watersheds and wellhead capture zones have the highest priority.
- ✗ Water bodies designated for special aquatic life use, exceptional state waters and outstanding national resources waters.

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Water Quality Goals

1. No lake, stream or wetland has a violation of Kansas Water Quality Standards due to nonpoint sources of pollutants.

2. All nonpoint pollutant sources protect Kansas surface and groundwater through the use of recommended water quality protection measures.

3. Achieve the ***Kansas Water Plan 2010 Objectives***. By 2010-

   - ✓ Reduce the average concentration of bacteria, biochemical oxygen demand, dissolved solids, metals, nutrients, pesticides and sediment that adversely affect the water quality of Kansas lakes and streams.

   - ✓ Reduce the average concentration of dissolved solids, metals, nitrates, pesticides and volatile organic chemicals that adversely affect the quality of Kansas groundwater.

   - ✓ Ensure that water quality conditions are maintained at a level equal to or better than year 2000 conditions.

Summary & Overview

✓ Kansas Clean Water Pledge

Because each of us as individuals, farmers, business owners, corporate officers and shareholders contributes in some measure to nonpoint source pollution we all share responsibility for abating nonpoint source pollution. The ***Kansas Clean Water Pledge*** is one means of demonstrating a personal commitment to improving and protecting Kansas' water resources. Individuals and organizations are to make this pledge through workshops, meetings, water festivals and demonstration projects. All persons making the pledge will receive a certificate commemorating the pledge.

Kansas Clean Water Pledge

I believe clean water is essential to the health and welfare of plants, animals and people living in and downstream of Kansas and I pledge –

1. To be aware of activities which threaten the quality of Kansas water resources,

2. To be aware of measures and practices which prevent the discharge of pollutants to Kansas water resources and

3. To the extent I am able, conduct my business and personal activities in a manner that will assure restoration and maintenance of clean water in Kansas.

By the year 2003 at least one Clean Water Celebration will have taken place in each of Kansas' 105 counties.

Summary & Overview

✓ ***Watershed Restoration and Protection Strategy***

To assure collaborative and comprehensive implementation of water quality protection measures a ***watershed restoration and protection strategy*** will be developed for each of Kansas' 90 HUC 8 watersheds in the order of watershed priority set out by Table 4 of the *Kansas Unified Watershed Assessment* (see Appendix C). The process of developing a watershed restoration and protection strategy is described in Appendix F. The completed Watershed Protection Strategy will include a description of the surface water and groundwater quality of the watershed, watershed water quality goals and the restoration and protection actions needed to achieve the water quality goals.

Watershed Restoration & Protection Strategy

1. ***Watershed Conditions Report*** - *known or assumed water quality, TMDLs need, pollutant source inventory and relative contribution of sources, current status of nonpoint source water quality protection measure implementation, public water supplies, water bodies designated for special aquatic life use, exceptional state waters and outstanding national waters*
2. ***Watershed Water Quality Goals*** - *desired water quality conditions or relevant water quality standards, water quality improvement needed to achieve standards*
3. ***Programmatic Goals*** - *number and type of water quality protection measures to be implemented, number and hours of technical assistance and information and education contacts*
4. ***Watershed Restoration & Protection Plan*** - *implementation projects, schedule, funding needs and sources of funding, lead and support organization responsibilities, progress monitoring and evaluation,*
5. ***Watershed Stakeholder Involvement*** - *leadership committee recruitment, public involvement tools and procedures, coordination*

Watershed Restoration and Protection Strategies (WRAPS) will be developed in the order set out by the "watershed restoration priority rank" found in Table 4 of the Kansas Unified Watershed Assessment (Appendix C). By 2010 WRAPS will be completed for each of Kansas 90 HUC 8 watersheds.

Summary & Overview

✓ ***Developing Watershed Water Quality Goals***

Watershed water quality goals will be guided by these principles –

- ✗ Individual water bodies which violate Kansas' water quality standards will be addressed through the Kansas program for developing and implementing total maximum daily loads (TMDLs).

- ✗ A watershed average water quality condition for surface water will be determined for ammonia, atrazine, biochemical oxygen demand, fecal coliform bacteria, nitrate, phosphorous, total dissolved solids and total suspended solids and compared to a statewide average water quality for these same substances. Watersheds which have an average water quality condition exceeding the statewide average water quality condition will be classified as having degraded water quality. A water quality improvement plan will describe the actions necessary to improve water quality conditions to the statewide average. Watersheds which have an average water quality condition that is better than the statewide average will be classified as having high quality water. A water quality protection (pollution prevention) plan will describe the actions necessary to maintain a condition of high quality water.

- ✗ In cases where the statewide average water quality is not sufficient to meet Kansas water quality standards or be protective of uses within the watershed (such as a lake watershed), site specific water quality goals will be developed. Where water quality standards are not met, a TMDL will be developed by KDHE's Office of Planning and Prevention.

- ✗ Watershed groundwater conditions will be evaluated in a similar manner for chlorides, nitrate, sodium and sulfate.

- ✗ Watersheds and water bodies which have water quality that is better than the statewide average will be assumed to be threatened unless it is known that all nonpoint pollutant sources in the watershed are implementing or are committed to implementing water quality protection (pollution prevention) measures.

Summary & Overview

✓ ***Pollutant Specific Implementation Strategies***

The watershed average concentration for atrazine, fecal coliform bacteria, nitrogen (indicated by nitrate), phosphorus, and total suspended solids exceed the statewide average over at least 28 percent of the state land area. Because of this widespread impact, specific implementation strategies should be developed for these pollutants. The pollutant specific implementation strategy will be developed under a collaborative management team comprised of representatives of state, local and federal agencies, universities and private sector organizations. The implementation strategy will include goals, performance measures, work products, assignment of work responsibilities and implementation schedule. Appendix G contains an example pollutant specific implementation strategy.

Pollutant specific implementation strategies will be prepared during 2001. Implementation of the strategies will be completed by 2006.

Summary & Overview

✓ ***Nonpoint Source Pollution Control Implementation***

Kansas goal is to assure implementation of the recommended water quality protection measures by all nonpoint pollutant sources. Recommended water quality protection measures are described in Appendix I. Implementation will be facilitated through information and education, financial assistance, technical assistance, technology transfer and enforcement where mandatory water quality protection measures are established. Implementation and administration and facilitation will be accomplished through the coordination and collaboration of state, local and federal agencies and private sector organizations.

Organizational Responsibilities
for
Implementation Administration & Facilitation

Organization	IE	FA	TA	TT	E
Kansas Department of Health & Environment	✖	✖	✖	✖	✖
Kansas State Conservation Commission	✖	✖	✖	✖	
Kansas Department of Agriculture	✖		✖	✖	✖
Kansas Water Office	✖				
Kansas Forest Service	✖	✖	✖	✖	
Kansas Department of Wildlife and Parks	✖	✖	✖	✖	✖
USDA Natural Resources Conservation Service	✖	✖	✖	✖	✖
USDA Farm Services Agency	✖	✖			✖
US Fish & Wildlife Service	✖	✖	✖		✖
US Army Corps of Engineers	✖	✖	✖	✖	✖
US Environmental Protection Agency	✖	✖	✖	✖	✖
K-State Research & Extension	✖		✖	✖	
County Conservation Districts	✖	✖	✖	✖	
Local Environmental Protection Programs	✖		✖	✖	✖
Private Sector Organizations	✖	✖	✖	✖	

IE Information and Education
FA Financial Assistance
TA Technical Assistance
TT Technology Transfer
E Enforcement

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✓ ***Collaboration***

Kansas will only achieve its vision of Kansas' lakes, rivers, wetlands and groundwater will be free of pollution caused by nonpoint pollutant source through the cooperative efforts of everyone. To that end we have established an Advisory Committee and Coordinating Committee described in Appendix N.

The Advisory Committee will provide advice to KDHE and the Coordinating Committee on program direction, project needs and selection and program effectiveness. The committee meets on the first Thursday of February, May, August and November. To assure widespread access to all persons interested in serving on the committee, the meetings will be held in Chanute, Dodge City, Hays, Lawrence, Salina, Topeka and Wichita. A member is any person willing to attend one of seven meetings over a two-year period.

The Coordinating Committee will assure that state, federal and local programs and activities are executed in a coordinated and collaborative manner.

The Kansas Nonpoint Source Pollution Management Plan is designed to be consistent with the Kansas Continuing Planning Process required by Section 303(e) of the Clean Water Act and the Kansas Water Plan prepared pursuant to the State Water Resources Planning Act - KSA 82a-901.

Kansas Nonpoint Source Pollution Management Plan
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Introduction	
What is the purpose of this document?	This document describes Kansas' plan for addressing water quality problems caused by nonpoint pollutant sources. It is a revision and update to the Kansas Nonpoint Source Pollution Management Plan approved by the U. S. Environmental Protection Agency in 1989. (The revision and update is needed to address, 1.) Changes in program administrative practices; 2.) Revised U.S. Environmental Protection Agency guidance as set out by the Nine Key Elements and, 3.) Kansas Water Plan 2010 Goals and Objectives. Appendix O contains a description of the Nine Key Elements. Appendix T is an index to how the Kansas plan addresses the Nine Key Elements.)
What is the nonpoint source pollution management plan?	The Kansas Nonpoint Source Pollution Management Plan describes Kansas' program for achieving Section 101(a)(7) of the Clean Water Act – ***It is the national policy that programs for the control of nonpoint sources of pollution be developed and implemented in an expeditious manner so as to enable the goals of the Clean Water Act to be met through the control of both point and nonpoint sources of pollution.***
	The nonpoint source pollution management plan –
Goals	✓ Identifies water bodies which require nonpoint pollution control to achieve water quality standards.
Objectives	✓ Identifies categories of nonpoint source pollution which contribute to water quality problems.
Best Management Practices	✓ Describes best management practices to ***"reduce to the maximum extent practicable, the level of pollution resulting from identified pollutant sources".***
Implementation Schedule	✓ Identifies non-regulatory or regulatory programs including enforcement, technical assistance, financial assistance, education, training, technology transfer and demonstration projects to achieve ***"implementation of best management practices".***

Partnerships	✓ Provides an implementation schedule to ***"provide for utilization of best management practices at the earliest practicable date"***. ✓ Identifies sources of assistance available to support implementation. ✓ Identifies federal financial assistance and development programs which will be reviewed for ***"consistency"*** with the state nonpoint source pollution management program.
What is Nonpoint Source Pollution?	In Kansas, pollution is defined as ***"Such contamination or other alteration of the physical, chemical or biological properties of any waters of the state as will or is likely to create a nuisance or render such waters harmful, detrimental or injurious to public health, safety or welfare, or the plant, animal or aquatic life of the state or to other designated beneficial uses".*** {KSA 65-171d(c)} Nonpoint source pollution occurs when rainfall, snow melt or irrigation runs over land or through the ground, picks up pollutants and deposits them into rivers, lakes or introduces them into groundwater in sufficient quantities to result in the conditions described above. Pollutants may be eroded soil particles, nutrients, bacteria or pathogenic organisms, pesticides, salts and a wide variety of chemical compounds used in everyday living.
What is a nonpoint pollutant source?	A nonpoint pollutant source is any source of pollutants which is not required to have a National Pollutant Discharge Elimination System (NPDES) permit. Using this definition, the only sources of pollutants not considered nonpoint sources are cities and industries discharging treated wastewater, confined animal feeding facilities with 1,000 or more animal units, storm water runoff of cities having a population of more than 100,000; construction activities disturbing more than 5 acres, and storm water runoff from selected industries. The U. S. Environmental Protection Agency has published new storm water runoff regulations which will require cities greater than 25,000 population and construction sites disturbing **one acre or more** to have an NPDES permit for stormwater runoff. ***Virtually everything we do for work or pleasure contributes to nonpoint source pollution.***

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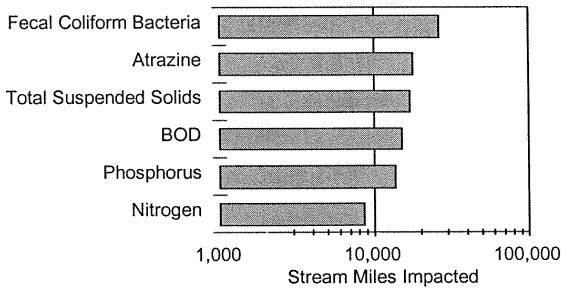
Nonpoint Source Defined by Kansas Water Quality Standards	The Kansas Water Quality Standards define **Nonpoint Source**: "any activity that is not required to have a national pollutant discharge elimination system permit that results in the release of pollutants to waters of the state." *KAR 28-16-28b(kk)*
How serious is the Kansas Nonpoint Source Pollution Problem?	Nationally, pollutant discharges from nonpoint pollutant sources are the reason for the majority of the nation's remaining water quality problems. In Kansas point sources (cities, industries and large feedlots) have implemented required water pollution controls. Virtually all Kansas point sources are now complying with pollution control rules. In the first 25 years after adoption of the Clean Water Act, Kansas rivers and streams experienced a 90 percent drop in fecal coliform bacteria counts and 60 percent drop in ammonia concentrations. Despite this level of performance by point sources, about 40 percent of Kansas stream miles currently suffer from water quality standards violations, mostly due to fecal coliform bacteria. The majority of these remaining water quality problems are due to nonpoint sources.
What is the condition of Kansas' water resources?	
Quick Summary	✓ ***Surface water*** is impacted by fecal coliform bacteria, atrazine, total suspended solids, biochemcial oxygen demand (BOD), phosphorus and nitrogen. ✓ ***Groundwater*** is generally free of pollution problems due to nonpoint sources. There are a few public water supplies that suffer from elevated nitrate concentrations, atrazine detections and MTBE.

Surface Water

This chart summarizes the relative magnitudes of the pollutants impacting Kansas streams. The water quality impact was determined by calculating the average concentrations of the pollutant in a HUC 8 watershed and comparing this to the statewide average water quality condition.

Streams

Kansas Water Quality Summary



The estimated length of impaired streams is the summation of the length of all streams in the watershed. Streams with TMDLs are included in this tally.

To determine the condition of Kansas waters we examined the results of five years of water quality samples collected through the Kansas water quality monitoring network (See Appendix A) and the Kansas 303(d) list.

The 303(d) list (See Appendix D) identifies the surface water bodies which suffer a violation of Kansas water quality standards. From the 303(d) list, we find 522 individual water bodies (392 streams and 130 lakes) suffer at least one water quality standards violation. When a water body suffers a violation of water quality standard, a Total Maximum Daily Load (TMDL) is prepared.

TMDLs Needed

Seventeen different pollutants are identified as causing water quality standards violations in streams. Fecal coliform bacteria representing 52 percent of needed TMDLs is the most frequently violated water quality standard. Low dissolved oxygen represents 15 percent of the violations and 10 of the violations are due to sulfates. Chloride is the reason for 5 percent of the violations.

Lakes	Twelve different pollutants or conditions are the reason for 235 TMDLs in 130 lakes. Accelerated eutrophication is the reason for 47 percent of the lake TMDLs. Low dissolved oxygen accounts for 12 percent of the lake TMDLs. Fecal coliform bacteria accounts for only four percent of the lake TMDLs. Atrazine water quality standards violations occur in six (6) lakes. All of the atrazine TMDLs occur in lakes. Accelerated eutrophication is typically caused by phosphorus.
Elevated Concentrations	A TMDL is prepared when a water body suffers a water quality standards violation. This does not mean however that water bodies which do not need TMDLs are free of water quality threats. To further evaluate the quality of Kansas' water resources we have developed an additional evaluation metric – "elevated concentration". This metric was developed by first calculating the statewide average concentration and the HUC 8 watershed average concentration of atrazine, biochemical oxygen demand (BOD), fecal coliform bacteria, nitrate, phosphorus and total suspended solids. Watersheds which have an average concentration exceeding the statewide average concentration are defined as having an ***elevated concentration*** and in need of water quality improvement. Sixty-nine HUC 8 watersheds have sufficient water quality sampling data to support this analysis.
Unified Watershed Assessment	The Kansas Unified Watershed Assessment prepared in 1998 pursuant to the Clean Water Action Plan provided an additional means of evaluating the Kansas water quality conditions and needs. This assessment found that 80 percent of Kansas' surface area have watersheds with degraded water quality or other natural resources. The information derived from the 303(d) list and the elevated concentration metric is summarized in the following table (Summary of Kansas Water Quality Restoration Needs). When these information sources are combined, fecal coliform bacteria continues to be the most frequent water quality impact. Atrazine, even though it is an infrequent reason for a TMDL, is the second most widespread water quality impact. Total suspended solids, biochemical oxygen demand, phosphorus and nitrogen (based on nitrate) follow as widespread water quality impacts.

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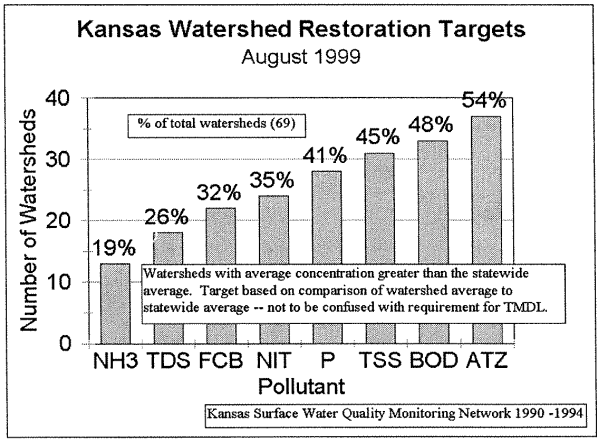
Summary of Kansas Water Quality Restoration and Improvement Needs

Pollutant	Total Maximum Daily Loads					Elevated Concentration (1)				
	Lake		River		Total	Concentration (2)		River Miles	Watershed Area - square miles	
Nitrogen			90	(3)	90	1.02	mg/L	8,483	23,094	(4)
Phosphorus	111	(5)	44	(6)	155	0.26	mg/l	13,454	31,454	
BOD	29	(7)	240	(7)	269	3.5	mg/l	14,856	35,574	
Total Suspended Solids	15	(8)	13	(8)	28	102	mg/l	16,788	39,765	
Atrazine	6		0		6	1.12	ug/l	17,571	39,410	
Fecal Coliform Bacteria (9)	9		807		816	1,422	#/100 ml	25,619	62,457	

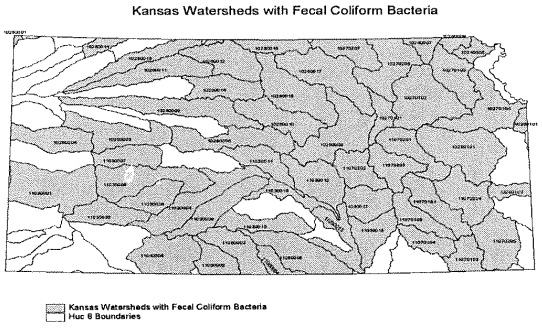
Notes
(1) Elevated Concentration based on comparing average watershed concentration to average statewide concentration
(2) Statewide average concentration
(3) Ammonia - 46 and nutrients - 44, 303d Report
(4) Nitrate
(5) Eutrophication, 303d Report
(6) Nutrients, 303d Report
(7) Low Dissolved Oxygen, 303d Report
(8) Siltation
(9) Fecal coliform bacteria - statewide average concentration of 1,422 count/100 ml exceeds the Kansas water quality standard for primary contact recreation (boating, mussel harvesting, swimming, skin diving, water skiing and wind surfing). However, it does not exceed the water quality standard for secondary contact recreation use (wading, fishing, trapping and hunting). The standard for primary contact recreation is - the geometric mean of 5 samples collected from consecutive 24 hour periods shall not exceed 200 organisms per 100 ml. No single sample shall exceed 900 organisms per 100 ml. The water quality standard for secondary contact recreation is 2000 organisms per 100 ml.

Water Quality Goal	Water quality goals for the Kansas nonpoint source program are - ✓ No, lake, stream or wetland will have a violation of Kansas Water Quality Standards due to nonpoint sources of pollutants. This will be achieved through the development of TMDLs and implementation of water quality protection measures designed to achieve the load reductions stipulated by individual water body TMDLs. ✓ All nonpoint pollutant sources protect Kansas surface and groundwater through the use of recommended water quality protection measures. All water resources are presumed to be threatened by nonpoint pollutant sources unless it is known that all nonpoint pollutant sources in a watershed are implementing the ***recommended water quality protection measures*** described in Appendix I. Information and education, technical and financial assistance and technology transfer strategies will be used to increase awareness of water quality protection needs, effective water quality protection measures and encourage implementation. ✓ Achieve the ***Kansas Water Plan 2010 Objectives***. By 2010, ✗ Reduce the average concentration of bacteria, biochemical oxygen demand, dissolved solids, metals, nutrients, pesticides and sediment that adversely affect the water quality of Kansas lakes and streams. ✗ Reduce the average concentration of dissolved solids, metals, nitrates, pesticides and volatile organic chemicals that adversely affect the quality of Kansas groundwater. ✗ Ensure that water quality conditions are maintained at a level equal to or better than year 2000 conditions.

Comparison of average HUC 8 water quality conditions to the statewide average water quality condition	 This chart summarizes the results of comparing the watershed average water quality to the statewide average water quality for ammonia (NP3), total dissolved solids (TDS), fecal coliform bacteria (FCB), nitrate (NIT), phosphorus (P), total suspended solids (TSS), biochemical oxygen demand (BOD) and atrazine (ATZ). The chart does not take into account TMDL needs. This is the reason fecal coliform bacteria appears as only impacting 22 (26%) of the watersheds. When fecal coliform bacteria TMDLs are added to this analysis, fecal coliform bacteria have the most widespread impact across Kansas.
Groundwater	Based on a review of samples collected from the Kansas groundwater quality monitoring network; Kansas groundwater quality is generally good from a statewide perspective. Using information from the *Safe Drinking Water Act Annual Compliance Report 2000*, atrazine, MTBE, nitrate and selenium are localized impacts.
Watershed Water Quality Targets	The water quality goals of the Kansas nonpoint source program can be summarized as 1) ***correct*** water quality standards violations occurring in individual water bodies, 2) ***improve*** watershed water quality that is degraded but not degraded sufficiently to be a violation of water quality standards and 3) ***protect*** watersheds with high water quality. Water quality standards violations occurring in individual water bodies are addressed through TMDLs.

Substance		Target	Standard
Ammonia	NH3	0.11 mg/L @T>26c	Temperature & pH dependent & pH>8.1, total NH3 < 1.0 mg/L
Atrazine	ATZ	1.12 ug/L	3 ug/L
BOD	BOD	3.5 mg/L	N/A
Fecal Coliform Bacteria	FCB	1,422 #/100 ml	Swimming: Geometric mean of 5 samples < = 200 #/100 ml or single sample < = 900 #/100 ml Other Recreation: < = 2,000 #/100 ml
Nitrate	NIT	1.02 mg/L	Nutrients: Aquatic Life Support: Plant nutrient concentrations shall not accelerate the succession or replacement of aquatic biota or production of undesirable quantities or kinds of aquatic life. Recreation: Plant nutrient concentrations shall not result in objectionable concentration of algae or algal by products or nuisance growths of submersed, floating or emerging aquatic vegetation.
Phosphorus	P	0.26 mg/L	
Total Dissolved Solids	TDS	808 mg/L	N/A
Total Suspended Solids	TSS	101 mg/L	Aquatic Life Support: Suspended solids shall not interface with the behavior or other factors related to the survival and propagation of aquatic or semiaquatic life or terrestrial wildlife.

Fecal Coliform Bacteria TMDLs are needed in 627individual stream segments



Appendix B

Fecal coliform bacteria live in the gut of warm-blooded animals. Fecal coliform is not believed to be a disease causing organism but its presence is an indicator of the water's sanitary conditions and indicates pathogenic organisms may be present. In Kansas, surface waters used for swimming shall not have (based on five samples collected over a thirty-day period) a geometric mean concentration of more than 200 fecal coliform colonies per 100 ml and no single sample shall exceed 900 fecal coliform colonies per 100 ml. Waters used for incidental recreation (such as wading) shall not contain more than 2,000 fecal coliform colonies per 100 ml.

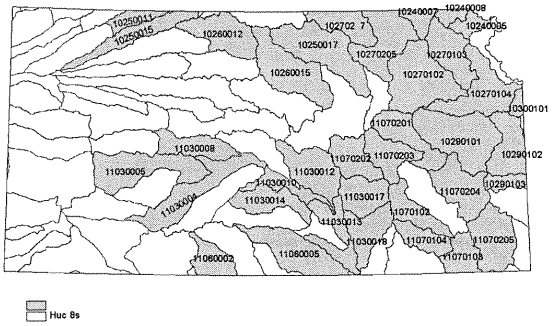
On the basis of all water quality samples (5,400 individual samples - See *Appendix A*) collected through the Kansas Water Quality monitoring network, 87 percent of all samples have fewer than 2,000 fecal colifom bacteria per 100 ml, 70 to 75 percent of all samples had fewer than 900 fecal coliform bacteria per 100 ml and 54 percent of all samples had fewer than 200 fecal coliform bacteria per 100 ml.

Atrazine

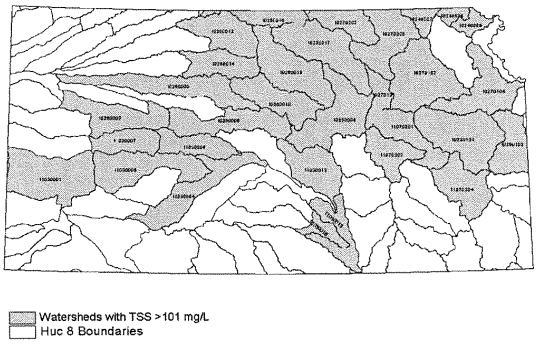
Appendix B

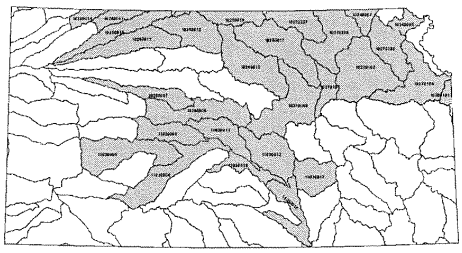
The Kansas water quality standard for atrazine is 3 ug/l. Atrazine TMDLs are required for six (6) Kansas lakes (Herington Reservoir, Hillsdale Lake, Mission Lake, Hiawatha City Lake, Edgerton City Lake and Tuttle Creek Lake). However, using the statewide average concentration metric (Atrazine = 1.12 ug/L), 36 HUC 8 watersheds have average atrazine concentrations exceeding this value. The range of concentrations is 1.2 to 3.2 ug/L. Atrazine pollution threats occur in about 56 percent of Kansas stream miles with a contributing watershed of 39,400 square miles.

Kansas Watersheds Threatened by Atrazine

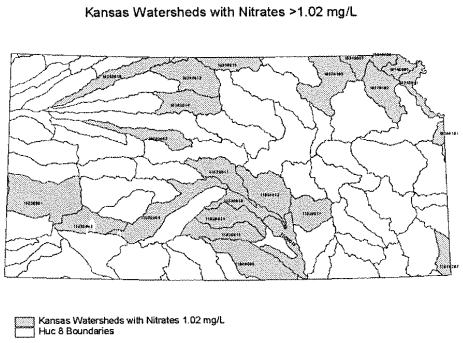


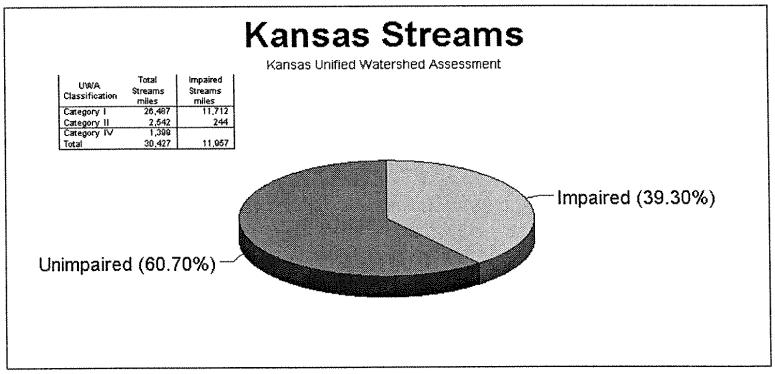
Atrazine is a herbicide used for weed control corn and grain sorghum fields and right-of-way maintenance.

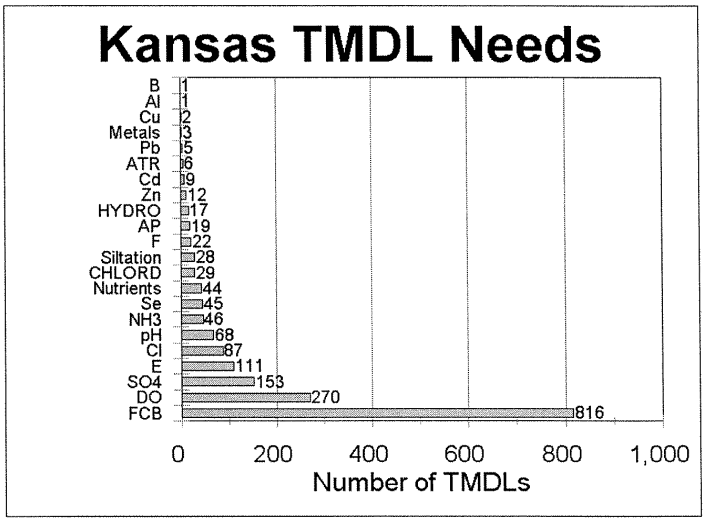
Total Suspended Solids ***Appendix B***	The water quality standard for Total Suspended Solids (TSS) is a narrative. While TSS is not specifically identified as a TMDL issue, ***siltation*** (a consequence of high TSS loads) is identified in 13 river and 15 lake TMDLs. The statewide average TSS concentration is 101 mg/L. The average concentration of 31 HUC 8 watersheds exceed this value, ranging from 102 to 303 mg/L. TSS pollution threats occur in about 54 percent of Kansas stream miles with a contributing watershed of about 40,000 square miles. Kansas Watersheds with TSS > 101mg/L  Erosion of the land surface (cropland sheet, rill and gully erosion, stream bank erosion, range and pasture gully erosion, road ditch erosion, construction sites and impervious surface runoff) are the principle nonpoint sources of total suspended solids.

Phosphorus ***Appendix B***	There is no specific water quality standard for Phosphorus. Phosphorus is a plant nutrient which has a narrative standard. Phosphorus is not specifically identified as a TMDL issue. ***Nutrients*** which includes nitrate as well as phosphorus are identified in 44 river TMDLs. Eutrophication which is accelerated by excess phosphorus loading is identified in 111 lake TMDLs. The statewide average phosphorus concentration is 0.26 mg/L. The average concentration of 28 HUC 8 watersheds exceeds this value with 43 percent of Kansas stream miles threatened. The contributing watershed area is a little more than 31,000 square miles. Kansas Watersheds with Phosphorous Concentrations > 0.26 mg/L  Watersheds with Phosphorous Concentrations > 0.26 mg/L Huc 8 Boundaries The principal nonpoint sources of phosphorus include soil erosion, livestock wastes, on-site wastewater, cropland runoff and atmospheric deposition.

Nitrate ***Appendix B***	As with phosphorus, nitrate is not specifically identified as a TMDL issue. The statewide average nitrate concentration is 1.02 mg/L This value is exceeded in 24 HUC 8 watersheds ranging from 1.1 to 4.5 mg/L. Nitrate pollution threatens 27 percent of Kansas' stream miles which have a contributing watershed of about 23,000 square miles. The principle nonpoint sources of nitrate are livestock waste, on-site wastewater, runoff of cropland and urban areas and atmospheric deposition.



Kansas Unified Watershed Assessment ***Appendix C***	Pursuant to the *Clean Water Action Plan*, the *Kansas Unified Watershed Assessment* (UWA) was completed in October 1998. The UWA classifies Kansas watersheds into four categories. Category I is watersheds in need of restoration. Category II is watersheds in need of protection. Category III is watersheds located on publicly owned land. Category IV is watersheds which do not have sufficient data to permit classification. According to this assessment, 83 percent of Kansas' area is in watersheds needing water quality restoration. Of the remaining 17 percent, 10 percent of the area has watersheds which have satisfactory water quality but need protective action to assure this condition is retained. About 7 percent of the state's watersheds need more study to determine an accurate assessment. Each of the 71 Category I watersheds are assigned a *"watershed restoration action priority"*. This priority score is used to direct state and federal financial funds towards work in these watersheds. The *Kansas Unified Watershed Assessment* is provided in Appendix C. The watershed restoration priority score is the most important element of the Kansas Unified Watershed Assessment.
Summary of the Kansas Unified Watershed Assessment	
Kansas 303d List	Section 303d of the Clean Water Act requires states to identify all surface water bodies which do not meet the state's surface water quality standards. This list identifies the water body name and the pollutant which does not

Appendix D	meet the water quality standard. A ***"total maximum daily load (TMDL)"*** is prepared for each listed water body and pollutant. Based on the Kansas 303d list, about 40 percent of Kansas streams and rivers suffer water quality standards violations. Fecal coliform bacteria is the most frequent violation of Kansas water quality standards. A summary of Kansas' TMDL needs is provided in Appendix D.
1,558 TMDLs are needed in 392 different rivers **235 TMDLs are needed in 130 different lakes**	
Kansas Water Quality Monitoring Data	Kansas has an extensive surface water quality monitoring network of over 550 sampling sites. Samples of water are collected approximately every six weeks and analyzed for a number of substances. The substances most typically used for evaluating water quality conditions are; ammonia, atrazine, biochemical oxygen demand (BOD), dissolved oxygen, fecal coliform bacteria, nitrate, phosphorus, total dissolved solids and total suspended solids. For the assessment of nonpoint source water quality impacts, water quality data for the time period of 1990 through 1994 was analyzed. ***A summary of watershed water quality conditions is provided in Appendix A.***

Average Stream Water Quality	Ammonia - 0.11 mg/L BOD - 3.5 mg/L Fecal Coliform Bacteria - 1,422 count/100 ml Nitrate - 1.02 mg/L Phosphorus - 0.26 mg/L Total Suspended Solids -101 mg/L Total Dissolved Solids
Most Frequently Detected Pesticides	Atrazine Metolachlor Alachlor Acetochlor 2,4-D Metribuzin Cyanazine Propachlor
Groundwater Statewide Average	Nitrate - 4.9 mg/L Chloride - 58 mg/L Sulfate - 134 mg/L Sodium - 54 mg/L
Where do pollutants come from?	Nonpoint pollutants come from virtually everything we do for work and pleasure. The following chart illustrates general sources of nonpoint pollutants. Appendix I provides a more comprehensive description of activities which produce nonpoint pollutants.

Kansas Nonpoint Source Pollution Management Plan
2000 Update

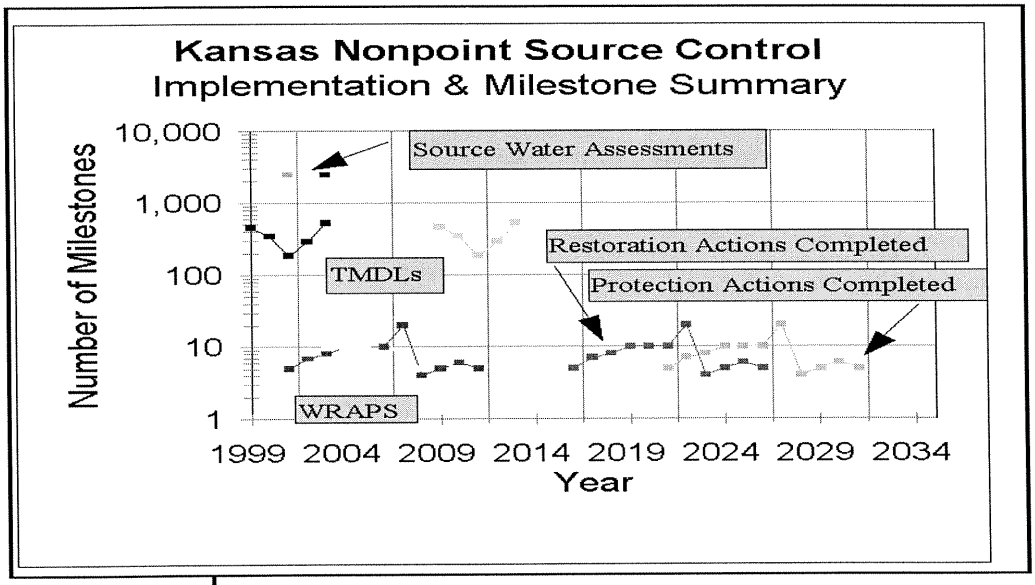
	Source of Pollutants								
Pollutant	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
Atrazine & Pesticides	✦	✦		✦		✦	✦	✦	✦
Bacteria		✦	✦	✦			✦	✦	
BOD		✦	✦	✦	✦		✦	✦	
Nitrogen	✦	✦	✦	✦		✦	✦	✦	✦
Phosphorus	✦	✦	✦		✦	✦	✦	✦	✦
Suspended Solids	✦	✦		✦	✦	✦	✦	✦	✦

1 - Cropland 2 - Livestock 3 - On-site wastewater

4 - Pasture/Range 5 - Riparian 6 - Transportation

7 - Urban 8 - Farms & Homes 9 - Hydrologic Modification

What are the specific nonpoint source pollution control goals of Kansas?	We envision ***Kansas water resources free of pollution caused by nonpoint sources***.
	Our long term goals are - 1. Eliminate water quality problems caused by nonpoint pollutant sources through the Kansas TMDL process. 2. All nonpoint pollutant sources implementing recommended water quality protection measures.

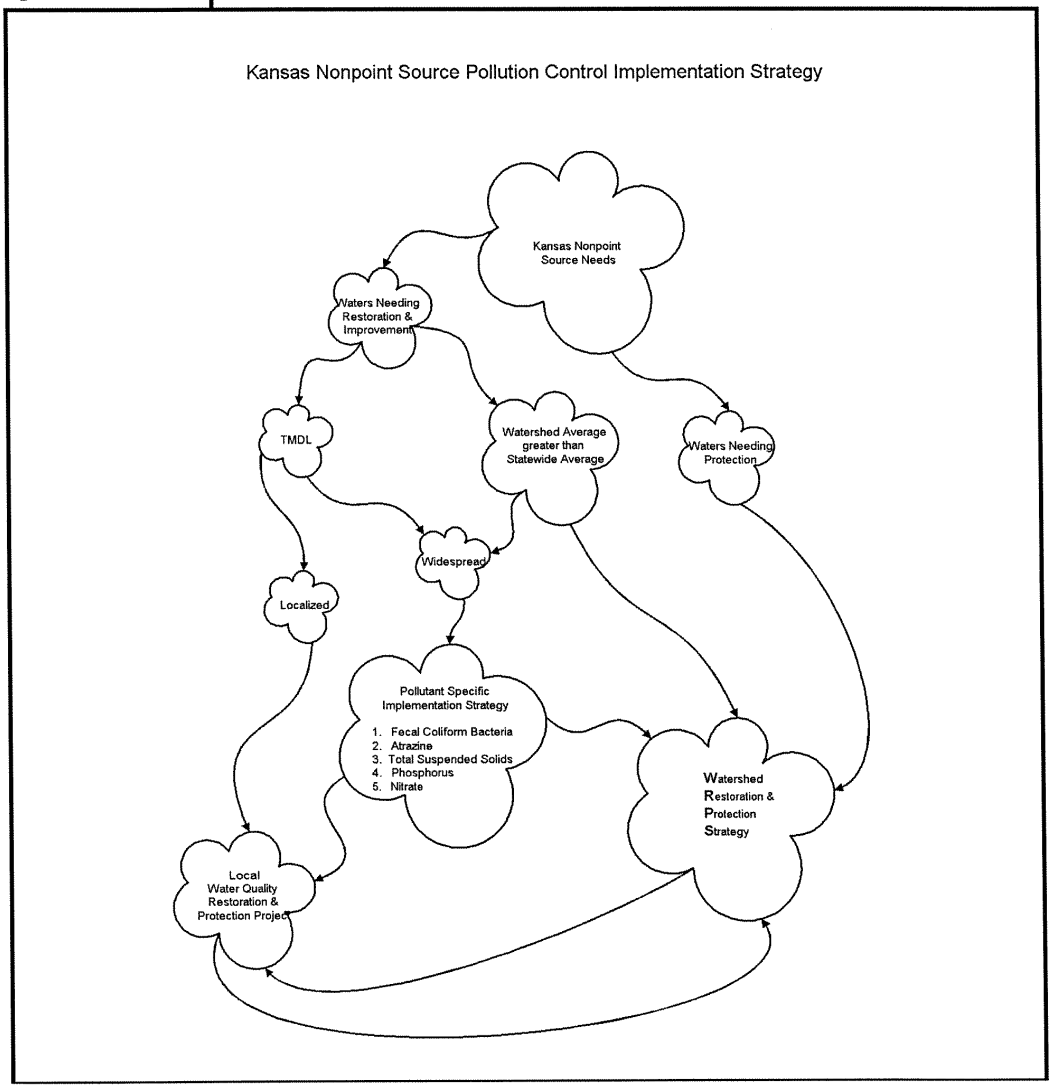


Milestones	
	We estimate it will take until the year 2031 to apply water quality protection measures to all nonpoint pollutant sources and to eliminate water quality problems caused by nonpoint sources. A detailed schedule for each watershed is provided in Appendix E.
2003	***TMDL development is completed for 1,794 needed TMDLs in 12 river basins and 71 HUC 8 watersheds.***
	The Kansas Source Water Assessment addressing 2,455 public water supply diversion points is completed and submitted to EPA.
2011	***Watershed Restoration and Protection Strategies will be complete for 90 HUC 8 watersheds.***
2013	***Implementation of TMDLs in 71 watersheds will be complete. Water quality standards violations in these watersheds are expected to be eliminated.***
2026	***Implementation of water quality protection measures intended to address elevated pollutant concentrations is completed.***
2031	Implementation of water quality protection measures intended to prevent the occurrence of pollution problems in high quality waters is completed.

How was this schedule developed?	Appendix E provides a detailed schedule of implementation actions for each river basin and each HUC 8 watershed within the river basin. The schedule is based on the following constraints and assumptions. The schedule for TMDL development and implementation (identified as DTMDL and ITMDL in Appendix E) is based on the provisions of the 1998 ***Consent Decree Regarding Kansas Natural Resources Council and Sierra Club vs. U.S. Environmental Protection Agency et al.*** The consent decree established a schedule for developing TMDLs and provided for a ten-year implementation time frame following TMDL approval. While the consent decree establishes the year 2006 as the final year for developing TMDLs, Kansas has adopted an accelerated schedule to develop TMDLs in a three-year time period. Source Water Assessments being developed to address Section 1453 of the federal Safe Drinking Water Act are required by statute to be completed by June, 2003. The schedule for developing Watershed Restoration and Protection Strategies (identified as SWRAP and CWRAP in Appendix E), developed in response to the ***Clean Water Action Plan - Unified Watershed Assessment*** is based on the Watershed Restoration Priority Rank set out by Table 4 of the ***Kansas Unified Watershed Assessment***. Eighteen to twenty-four months will be required to complete an individual HUC 8 Watershed Restoration and Protection Strategy (WRAPS). Because the higher priority HUC 8's have the most complex social and political landscape, resources limit the maximum number of WRAPS to be worked in any given year to be around ten. As experience is gained, we anticipate we will complete 20 WRAPS in 2006. Implementation of water quality restoration and protection measures is expected to begin immediately upon completion of an individual HUC 8 WRAPS (identified in Appendix E as SP&RI). In water bodies with TMDL needs, implementation will begin immediately upon approval of the TMDL, implementation will take place over a ten-year period. TMDL implementation will have priority for available resources. Due to the accelerated completion of TMDLs implementation of TMDLs will proceed completion of a WRAPS. As TMDL implementation is accomplished, water quality standards violations are eliminated, however, elevated concentrations (the HUC 8 watershed average exceeds the statewide average) of some pollutants may remain. Implementation of water quality protection measures will continue though 2026 to address these. An implementation time frame of fifteen years from completion of a WRAPS is provided to address elevated concentrations. This milestone is identified as CREST in Appendix E).

	Watershed pollution prevention needs (represented by pollutants having a watershed average concentration less than the statewide average) will be accomplished in a twenty-year time frame following completion of a WRAPS. This milestone is identified as CPROT in Appendix E.

How does Kansas expect to achieve these goals.	The conceptual Kansas Nonpoint Source Pollution Control Strategy is illustrated by the following figure.



Implementation Strategy	Kansas nonpoint source pollution control water quality protection needs can be divided into two major groups – 1) waters needing restoration and 2) waters needing protection. Waters needing restoration can be further divided into waters where implementing a TMDL is required and waters which have elevated concentrations. Water quality restoration actions whether required by a TMDL or elevated concentration can be classified as localized or widespread. Localized water quality impacts will be addressed through ***local water quality restoration and protection projects***. Widespread water quality impacts will be addressed through ***pollutant specific implementation strategies***. Waters needing protection are identified through the ***Watershed Restoration and Protection Strategies (WRAPS)***. Local water quality restoration and protection projects in addition to being the result of a localized TMDL may also evolve from activities associated with a pollutant specific implementation strategy and WRAPS activities.
Watershed Restoration and Protection Strategy ***Appendix F***	The ***Watershed Restoration and Protection Strategy*** is a planning process to identify all the water quality protection and restoration needs of a HUC 8 watershed. The WRAPS will serve to integrate TMDL implementation, water quality restoration, water quality protection, Source Water Protection and Wellhead Protection activities required under the Safe Drinking Water Act and habitat restoration and protection activities. Following completion of the ***Unified Watershed Assessment (UWA),*** watershed restoration is the next action under the ***Clean Water Action Plan.*** The ***Clean Water Action Plan*** stipulates that watershed restoration strategies be prepared for each of the Category I watersheds identified in the state's UWA. The ***Clean Water Action Plan*** propose that additional federal funds would be appropriated for the purposes of implementing watershed restoration action plans. The completed WRAPS will provide guidance in the identification of activities eligible for the additional federal funding. The Kansas WRAPS process described in Appendix F is intended to establish a collaborative relationship between local watershed leaders and state and federal agencies. KDHE - Nonpoint Source Section staff will serve as "watershed facilitators" to 1) prepare an initial watershed conditions report, 2) bring water quality information to the attention of watershed leaders through ***leader briefings***, 3) present watershed water quality information to the general public, 4) assist watershed leaders organize a ***watershed stake holders committee,*** 5) assist the watershed stake holders committee and the watershed public ***identify watershed water quality***

	goals, revise the watershed conditions report and develop the final ***Watershed Restoration and Protection Strategy***. Kansas watershed restoration and protection strategies will be prepared for each of the 90 Kansas HUC 8 watersheds. WRAPS for all Kansas watersheds will be completed by 2006.
Local Water Quality Restoration and Protection Project	A local water quality protection and restoration project will typically focus on a relatively small (HUC 11 or smaller) watershed (or other geographic area) such as a small public water supply lake, public water supply wellhead protection area or recreational lake. Local water quality restoration projects will require establishment of water quality goals for the specific geographic area, development of detailed implementation plans and will be designed to provide protection as well as restoration. Through the Advisory Committee, Coordinating Committee, WRAPS process, pollutant specific implementation strategies and the Kansas Environmental Leadership Program, Kansas will have increased capacity of local leadership to champion locally developed and sponsored water quality restoration and protection projects. Annual proposal guidance for Section 319 grant funded projects will identify priority watershed and associated water quality needs. Project evaluation criteria will be used to assure that priority needs are addressed.
Pollutant Specific Implementation Strategy	Where a single pollutant impacts large geographic areas of the state, a ***pollutant specific implementation strategy*** will be developed and followed to address these water quality impacts. Pollutant specific implementation strategies will be developed for fecal coliform bacteria, atrazine and pesticides, total suspended solids, phosphorus and nitrates. An example pollutant specific implementation strategy is found in Appendix G.

Short Term Goals & Milestones				
Pollutant Specific Implementation Strategies				
Strategy	Strategy Adopted	Funding Secured	Project Team Established	Implementation Time Frame
Fecal Coliform Bacteria	7/1/2000	7/1/2000	8/1/2000	8/1/2000-12/2006 for 10 highest priority UWA Watersheds
Atrazine	4/1/2001	7/1/2001	8/1/2001	8/1/2001-12/2006
Total Suspended Solids	4/1/2001	7/1/2001	8/1/2001	8/1/2001-12/2006
Phosphorus	4/1/2001	7/1/2001	8/1/2001	8/1/2001 -12/2006
Nitrate	4/1/2001	7/1/2001	8/1/2001	8/1/2001-12/2006

Program Administrative Goals & Milestones		
Activity	**Description**	**Complete by**
Advisory Committee ***See Appendix N***	The Kansas Nonpoint Source Advisory Committee provides advice on program direction, project selection and program effectiveness. The advisory committee is not a decision making body. Advisory committee meetings are held the first Thursday of February, May, August and November. Any person may be a member of the advisory committee by attending an advisory committee meeting and signing the registration. To remain in good standing an advisor must attend at least one meeting during a two-year period.	11/1/2000
Coordinating Committee	The Kansas Nonpoint Source Coordinating Committee is comprised of 31 members representing state, federal or tribal organizations and private sector and local government organizations.	2/1/2001

See Appendix N	The purpose of the coordinating committee is to assure that state, federal and local programs that impact on water quality are executed in a coordinated and collaborative manner.	
Increase Capacity to Achieve Nonpoint Source Goals	Graduate at least 100 students from the Kansas Environmental Leadership Program (KELP).	12/2004
	Establish Farm*A*Syst, Home*A*Syst as the standard of practice for identifying water quality threats at farmsteads and home sites.	7/2001
Pledges to Protect Water Quality *See Appendix Q*	Devise a means of securing from individuals, local and state governmental entities, business and industrial organizations -- "pledges to protect" Kansas water quality. The ***Kansas Clean Water Pledge*** will be distributed at public meetings and water festival events to develop a list of people who are interested in helping protect Kansas water resources from nonpoint source pollution. Each person making the pledge will receive an attractive poster of the pledge to serve as a reminder of the importance of clean water and the responsibility of each one of us to protect this resource. In addition, all recipients of Section 319 nonpoint source pollution control grants will be asked to sign the pledge. Furthermore, Clean Water Neighbor grants will also be required to secure pledges from members of the community.	12/31/2000
Celebrate Water Quality	Have a water quality celebration in each of Kansas' 105 counties, recognize individuals practicing water quality protection excellence.	12/2003
Institute a Revolving Loan Fund for Nonpoint Sources	The January 19, 2000 offering of *Kansas Water Pollution Control Revolving Fund Revenue Bonds* identified an ***Environmental Initiatives Fund***. This fund will serve as the source of funds for nonpoint source pollution control loans. In addition, KDHE has a cooperative project with Kansas State	7/1/2001

See Appendix H	University Department of Agricultural Economics to develop necessary administrative rules and regulations and agreements with local banks to make effective use of loans to address nonpoint source pollution control problems. A reprint of an excerpt of the January 19, 2000 bond offering and the conceptual flow chart is provided in Appendix H. EPA Region VII - Clean Water SRF program has a complete copy of the bond offering.	
Source Water Assessment	Integrate the expectations of the Kansas nonpoint source assessment with the Source Water Assessment Program required under the Safe Drinking Water Act.	9/30/2000
	Complete Kansas Source Water Assessment.	6/1/2003
Annual Report of Progress	Prepare the Annual Report of Progress in Abatement of Nonpoint Source Pollution - See Appendix S for details.	12/31 annually
Consistency Reviews	Review activities of federal and state agencies to assure programs are consistent with the Kansas nonpoint source pollution management plan. Agencies targeted for consistency reviews and schedule are Environmental Protection Agency FFY 2001 Department of Transportation FFY 2002 Defense Department FFY 2002 USDA FFY 2001	Continuous
GRTS	Fully implement GRTS reporting and information management system.	12/31/2001
Review & Update Plan	1. Perform a comprehensive review of implementation progress. 2. Determine if the rate of progress is such that plan goals will be achieved. 3. Revise the implementation strategy as necessary.	9/30/2006

Water Quality Performance Watersheds	Select 12 to 20 HUC 8 Watersheds to be used to measure improvements in water quality.	12/31/2001

General Questions & Answers about Kansas Nonpoint Source Pollution Control	
What are we expected to do to address nonpoint pollution impacts?	There are two basic ways to correct or prevent water quality problems caused by the discharge of nonpoint pollutant sources — ✓ We prevent the formation of the pollutant or ✓ We intercept the pollutant and treat the pollutant before it reaches a water body of interest. These nonpoint source pollution control measures are often referred to as ***best management practices - BMPs.*** Because the term BMP is often used in the context of many different situations, we prefer the term ***"water quality protection measure"*** when referring to practices and measures to prevent or control the discharge of nonpoint pollutants to waters of the state. ***Water quality protection expectations for the general categories of nonpoint pollutant sources found in Kansas are summarized in Appendix I.*** When the U.S. Environmental Protection Agency Office of Water, Nonpoint Source Control branch finalizes the draft ***National Management Measures to Control Nonpoint Source Pollution from Agriculture*** Appendix I will be reviewed and updated as appropriate.
How does an owner of a nonpoint pollutant source learn how to protect water quality?	Because the threat of nonpoint source pollution is so widespread and involves everyone, there are many ways to learn of effective water quality protection measures as well as learn how to install or use these measures. In Kansas, protection of water resources from nonpoint pollutant sources is a partnership of many state, federal and local government agencies and organizations, individuals and private sector organizations. ***Some of Kansas' agencies and organizations and their responsibilities for assuring Kansas water resources are free from pollution caused by nonpoint pollutant sources are summarized in Appendix J.***

What are the water quality protection tools used in Kansas?	Information and education, technical assistance, technology transfer, demonstration projects, financial assistance and enforcement of regulations are tools used to assure that Kansas water resources are protected and/or restored from the damaging effects of nonpoint pollutant sources.
Information & Education	We will make extensive use of information and education activities to inform individuals and organizations of Kansas water quality protection and restoration needs and effective water quality protection measures. We will use internet technology, press releases, newsletters, fact sheets, exhibits, Clean Water Neighbor grants, presentations, etc. to increase awareness and knowledge of Kansas water quality needs and solutions. The Kansas Environmental Leadership Program will be used to increase the leadership skills of local water quality protection project managers.
Technical Assistance	We will use some portion of Section 319 grant funds to support technical assistance activities of partner organizations. Examples of such support include the Kansas Rural Center Clean Water Farms program, the River Friendly Farmer program, the Kansas Wetland and Riparian Areas Alliance, watershed assessments performed by Kansas State University for local project sponsors.
Technology Transfer	We will use some portion of Section 319 grant funds to develop and evaluate innovative water quality protection measures such as wetlands for livestock pollution control. The results of evaluations will be provided to advisors, designers and consultants through workshops and handbooks.
Demonstration Projects	Watershed based projects will continue to be the primary means of demonstrating effective water quality protection measures.
Financial Assistance	Section 319 funds will be used to support local project sponsors deliver information and education, technical assistance, technology transfer and demonstration projects. Other funding sources such as EQIP, Kansas Nonpoint Source Pollution Control Funds, etc. will continue to be the primary sources of financial assistance for implementing water quality protection measures.

Enforcement	Where there are rules and regulations applicable to nonpoint pollutant sources (examples include on-site wastewater and livestock pollution control) enforcement through orders and fines will be used where necessary to assure compliance with the regulations.
Do we really have to do anything?	Yes if we wish to assure Kansas' water resources will sustain us and our aquatic life resources into the future. There are some nonpoint pollutant sources which have regulations requiring action and others where voluntary response is needed. Examples of those requiring action include pesticide use, livestock production and on-site wastewater. ✓ ***Pesticide Use*** The pesticide label is the regulation for the use of the pesticide. If you read the label closely, you will see the sentence -- *"It is a violation of federal law to use this product in any way except as provided by these instructions".* ✓ ***Livestock Production*** Livestock production is another example. Kansas statutes essentially require that any livestock production enterprise not have a *"significant pollution potential"* . Feedlots confining 300 or more animal units must register with KDHE. Smaller facilities are not required to register but must be operated in a manner that does not result in a *significant pollution potential.* ✓ ***On-site Wastewater*** An *on-site wastewater treatment facility* such as a septic tank lateral field is required to be constructed and operated in compliance with either state or local rules and regulations. *Abandoned water wells* must be plugged in accordance with state rules and regulations. Failure to comply with these could result in penalties or fines. Other nonpoint pollutant sources such as application of commercial fertilizer or runoff from cropland have no rules or regulations. For these sources, voluntary use of water quality protection measures is strongly encouraged through incentives.

	Everyone contributes nonpoint source pollution, our overall expectation is that everyone will be aware of effective water quality protection measures and everyone will make a commitment to use water quality protection measures.
How do we know if we are making any progress?	There are two ways to measure progress – (1) measure improvements in water quality conditions and (2) count the number of water quality protection measures being used and maintained. ✓ ***Measure improvements in water quality conditions*** This is the most definitive means of establishing progress towards improved water quality. Kansas has an extensive water quality monitoring system which can be used to establish a baseline or starting point. Unfortunately the size of watershed represented by each monitoring site is fairly large. Due to the large area sampled by an individual monitoring site, the time between application of water quality protection measures in a watershed and a response at the monitoring site is large. As a consequence, many years of monitoring will be required to accurately measure a response to implementation of water quality protection measures. In addition, a substantial fraction of the watershed will need to have water quality protection measures implemented before a significant change in water quality conditions can be detected. Measuring a change in water quality conditions of a water body that is not polluted may be difficult. When a water body is not polluted, the objective of implementing water quality protection measures is to assure that the water body remains in this unpolluted condition. ✓ ***Count the number of water quality protection practices installed and maintained*** This is clearly the easiest way to measure progress. If a goal is to have all livestock producers in a given area (watershed or county) implementing a water quality protection plan the number of plans completed and under implementation as well as the number remaining is a very useful and effective performance measure. However, this type of monitoring cannot be directly translated

	into water quality conditions. This may be the most effective means of establishing that a water body which has no water quality problems is protected. ✓ ***Performance Evaluation Strategy*** It is likely to take several years to implement water quality protection measures on a large enough fraction of a HUC 8 watershed to affect a measurable improvement in the quality of the water in the watershed. We will identify several (12 to 20) representative watersheds to serve as indicators of progress. These watersheds will be modeled (using AG NPS or a similar model) which relate watershed management to estimated water quality condition. As water quality protection measures are implemented in the watershed, the model will be run to estimate the expected improvement in water quality. Physical water quality sampling will also take place at representative points within the watershed. The resulting physical water quality data base will be coupled with estimated water quality predicted by the watershed model to measure the rate of water quality improvement and to estimate maximum likely improved water quality. For surface water, we will estimate the annual load of BOD, nitrogen, phosphorus and total suspended solids from each HUC 8 watershed. These loading estimates will be compared to the estimated year 2000 loads. Based on the change in loads the estimated improvement in water quality will be determined.
How does the Kansas Plan identify impaired waters?	When a water body suffers a violation of water quality standards, it is said to be **impaired**. Kansas water quality standards are based on numerical criteria and narrative criteria. A numeric criteria exists when there is a specific numerical statement of acceptable water quality conditions. The statement — fecal colifom count of a water body used for wading shall not exceed 2,000 counts per 100 liters is an example of a numeric criteria. A numeric criteria greatly simplifies the task of identifying an impaired water. It is simply a matter of taking a sample of the water, analyzing it and comparing the result to the criterion.

	The process of establishing a criterion to be used as a water quality standard is difficult and time consuming. Specific evaluation protocols are needed to establish criteria that are valid, accurate and reliable. To provide a means of addressing water pollution problems resulting from substances for which numeric criteria have not been established, narrative criteria are also used. Narrative criteria is a literal description of a desired or undesirable water quality condition. "The water body shall be free of public health hazards" is an example of narrative criteria. Narrative criteria is effective in evaluating a specific observed water quality condition but is difficult to translate into pollutant load reductions that watershed nonpoint pollutant sources must achieve. For example, the presence of large quantities of garbage such as meat scraps in a stream would represent an obvious public health hazard. The appropriate action for this type of situation is to remove the material, punish the responsible party (if one can be found) and prevent recurrence of future incidents. A more difficult to apply narrative criterion is that for nutrients. The typical nutrient criterion is — "The water body shall not have concentrations of the plant nutrients nitrogen and phosphorus in amounts which will result in undesirable nuisance conditions". Nitrogen and phosphorus are substances which can be associated with specific nonpoint pollutant source categories — namely, fertilizer application, livestock and on-site wastewater. However, if the desired water quality condition cannot be translated into a pollutant load, it is very difficult to set out quantitative pollutant load reduction goals to be achieved by nonpoint pollutant sources.
How will the Kansas Nonpoint Source Pollution Management Plan guide the development of projects to address identified water quality problems?	Watersheds with water quality problems have been identified through the Kansas Unified Watershed Assessment. In addition average water quality conditions for the 69 HUC 8 watersheds which have water quality monitoring sites has also been completed. An annual program review will be performed between October 1 and December 31. The program review will result in an ***"Annual Report of Progress in Abatement of Nonpoint Source Pollution"***. The annual report will also address the requirements of Section 319 (h)(11) - ✓ Report progress in meeting the Milestone schedule.

	✓ Reductions in nonpoint source pollutant loadings and improvements in water quality resulting from implementing the management program will be reported (to the extent appropriate information is available). The report will identify specific water resources needing attention. The annual guidance (issued by September 1 of each year) for soliciting nonpoint source pollution control demonstration projects will stipulate that project proposals are specifically requested to address these identified problems. Project proposals addressing identified water quality problems will receive priority consideration for available funds. The ***Annual Report of Progress in Abatement of Nonpoint Source Pollution*** will serve as input to the Kansas state water planning process to update the policy section and river basin sections of the *State Water Plan.* Other agencies such as the State Conservation Commission and USDA NRCS and FSA will be encouraged to provide similar priority for work funded by these organizations.
Is financial assistance available to help implement water quality protection measures?	Annually, Kansas has approximately $29.5 million available for implementation of measures and practices which protect or improve water quality. Of this approximately $11.4 million is specifically ear-marked for implementation of the nonpoint source pollution control program. These funds are available through several state and federal agencies. $ million CWA Sec 319 Nonpoint Source 3.7 - FFY 99, 2000 Non-federal Sec 319 Match 2.4 + Local Environmental Protection 1.9 + EQIP 4.5 Average FFY 98,98,99 KS NPS Fund 2.5 + Average SFY 96,98,99,2000 CW SRF 1.0 + planned CRP 6.8 ++ KS Water Resources Cost Share 4.45 * KS WQ Buffer Initiative 0.08 * KS Riparian & Wetland Protection 0.2 * KS Watershed Program 0.8 * KS Small Lakes 0.23 * Aid to Conservation Districts 1.0 *

	+ Funds specifically earmarked for nonpoint source pollution control ++ Estimated annual amount available for new enrollments and continuous sign up. * Recommended in January 10, 2000 ***Governor's Budget Report*** for fiscal year 2001. CW SRF Clean Water Act State Revolving Loan Fund administered by KDHE (see Appendix H) CRP Conservation Reserve Program administered by USDA Farm Services Agency EQIP Environmental Quality Incentives Program administered by USDA Natural Resources Conservation Service. A summary of financial assistance available in Kansas is found in Appendix K.
How does one apply for financial assistance? ***Appendix M***	Each of the different sources of financial assistance has different eligibility criteria and application procedures. Persons interested in receiving financial assistance will need to contact the identified funding agency. Appendix M contains the application form and instructions for Section 319 Grant Funds and other funds administered by the Kansas Department of Health and Environment - Nonpoint Source Section.
How does the Kansas plan address watersheds?	The Kansas plan uses the HUC 8 watershed as the basic unit of analysis. There are 90 different HUC 8 watersheds in Kansas. These range in size from a few square miles to several thousand square miles. The average size is 885 square miles. Smaller watersheds within a given HUC can be selected as needed to develop a specific water protection or restoration plan.
What is KELP?	KELP means Kansas Environmental Leadership Program. This program was developed cooperatively by K-State Research and Extension and KDHE. Initial development costs were provided through a Section 319 grant. The objective of the program is to train participants in the principles of leadership and water quality protection. A class of up to 28 students is selected for ten days of training through five sessions. Training consists of lectures, field trips, individual and group exercises

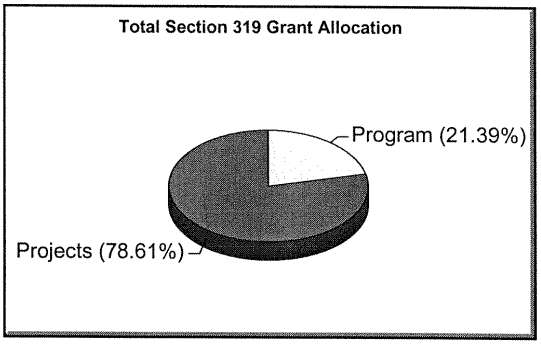
	and projects. *The Kansas Environmental Leadership Program is a combination of activities and resources that pulls together the most current leadership studies and practice with current thinking and research on water and water quality. The result is an experience in leadership that will prepare graduates to become effective catalysts for water quality protection.* For more information see – http://www.bae.ksu.edu/kelp/ and http://www.oznet.ksu.edu/library/ageng2/mf2352.pdf
What is Farm*A*Syst & Home*A*Syst?	Farm*A*Syst and Home*A*Syst is a set of evaluation tools designed to help the owner identify activities and situations around the farm and home which represent pollution threats. Farm*A*Syst was developed to help farmers with on-site water supply wells. Farm*A*Syst consists of a series of worksheets which help identify pollution threats to the farm's drinking water supply. Home*A*Syst is similar but addresses non-farm home sites. Both evaluation systems include a series of worksheets to help assess how effectively the drinking water supply is protected. The answers reveal how farmstead and home activities and practices might affect well water. A series of fact sheets suggest water quality protection measures the owner can do as will as provide information on where to get additional assistance. For more information see. http://www.oznet.ksu.edu/library/h20ql2/samplers/mf1050.htm
What is the Kansas 303d List?	When used in this document Kansas 303d List refers to – *1998 Kansas Water Quality Limited Segments – 303(d) List* published July 1998 by the Kansas Department of Health and Environment. "303(d)" refers to Section 303(d) of the Clean Water Act. It requires each state prepare a list of water bodies within the state that do not meet the state's water quality standards. Under the Clean Water Act, these water bodies are known as "water quality limited water bodies" and require the development of a total maximum daily load.

What is a TMDL?	***"TMDL"*** means ***"Total Maximum Daily Load"***. A TMDL is needed when a water body continues to have violations of the state water quality standards after point sources have implemented minimum required water pollution control systems. The TMDL represents the maximum daily pollutant load that can be discharged to a water body without causing a violation of water quality standards.
What is a *"Watershed Restoration & Protection Strategy"?*	A ***Watershed Restoration & Protection Strategy*** (WRAPS) is Kansas' term for the next step after completion of the Unified Watershed Assessment. It embodies both protection and restoration actions required in a given HUC 8 watershed. The WRAPS process is intended to serve as a means of integrating nonpoint source pollution control expectations of the Clean Water Act, source water assessments required under the Safe Drinking Water Act and Kansas Water Plan strategies including Local Environmental Protection Plans and Local Nonpoint Source Pollution Management Plans into a unified watershed strategy. Appendix F provides an outline of the process for development of the Watershed Restoration & Protection Strategy.
What is a water quality protection plan?	If a water body has no water quality problems (has no violations of water quality standards), this should not be a justification for no action. The water body continues to be threatened by nonpoint pollutant sources until it can be shown that a significant majority of pollutant sources within the watershed are implementing and maintaining recommended water quality protection measures. Ideally, all of the nonpoint pollutant sources are implementing water quality protection actions. A water quality protection plan is a description of the actions and activities to be taken to assure widespread implementation of recommended water quality protection measures. The plan — 1) describes water quality conditions to be maintained, 2) quantifies water quality protection needs (for example number of miles of riparian area needing improvement, number of livestock farms needing water quality protection plans, etc.), 3) provides an estimate of implementation costs, 4) describes implementation responsibilities (information and education, technical assistance, etc.) of the various partners sponsoring the plan and 5) describes a methodology for measuring progress.

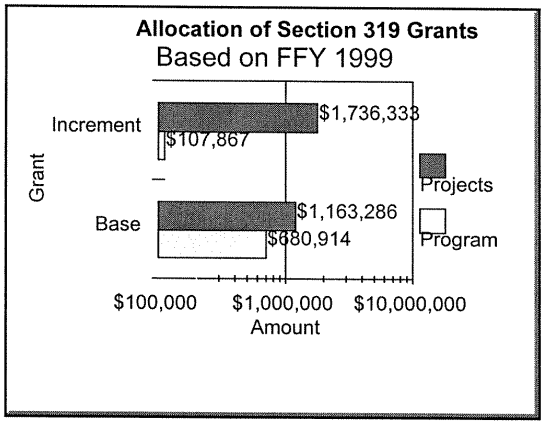
What is a water quality restoration plan?	When a water body suffers water quality standards violations, action is needed to eliminate the violation, i.e., restore water quality. A water quality restoration plan is therefore a plan which identifies the actions needed to restore the water body to its desired conditions (absence of water quality standards violations). A water quality restoration plan will include the following items — 1) a description of current water quality conditions, 2) a description of desired water quality conditions and the quantity of pollutants which need to be reduced to achieve water quality standards, 3) an analysis of the likely water quality improvements resulting from widespread implementation of minimum recommended water quality protection measures and the determination of additional water quality protection actions if implementation of the minimum recommended water quality protection measures will not achieve desired water quality conditions, 4) an identification of the pollutant abatement actions needed by pollutant sources in the watershed, 5) an estimate of implementation costs, 6) description of implementation responsibilities (information and education, technical assistance, etc.) of the various partners sponsoring the plan and 7) describes a methodology for measuring progress. A TMDL Implementation Plan is an example of a Water Quality Restoration Plan.
How does the Kansas plan balance statewide needs and watershed needs?	The expeditious implementation of water quality protection and restoration measures requires commitment and action by each individual and organization in Kansas. Kansas will: ✓ Assure all individuals and organizations are aware of water quality needs and solutions through statewide programs and activities and geographic based demonstration projects and ✓ Provide financial assistance for implementation of water quality protection practices and measures. The major resources available to Kansas are Clean Water Act Section 319 Nonpoint Source Pollution Control Grant funds, USDA Environmental Quality Incentive Program (EQIP) funds, Kansas Nonpoint Source Pollution Control Funds and Local Environmental Protection Program Funds.

Section 319 grant funds will be the primary resource for assuring that individuals and organizations have the capacity to identify water quality protection and restoration needs and are able to select and specify effective water quality protection measures. National EPA NPS Program guidance allow a maximum of 20% of Section 319 grants to be used for development of watershed restoration action strategies, TMDLs and water quality assessments.

About 80 percent of total Section 319 grant funds are allocated to support cooperative geographic demonstration projects.



The remaining share is used to support statewide programs and activities. Since federal fiscal year 1999, Section 319 grant funds have been appropriated as base grants and incremental grants. Use of incremental grants is restricted to the priorities set out by the Unified Watershed Assessment. Kansas has allocated over 90 percent of incremental grant fund to support cooperative geographic demonstration projects. Base fund grants are not restricted to the priorities of the Unified Watershed Assessment. About 37 percent of the base grant is used to support statewide activities. The remaining is used to support cooperative geographic demonstration projects.



The Kansas nonpoint source pollution control effort will promote implementation of recommended water quality protection measures on a statewide basis through trade association and organization newsletters, conferences and demonstration projects across the state. Watershed based efforts will be directed by the results of the Kansas Unified Watershed Assessment. A ***watershed restoration and protection strategy*** will be developed for each Category I-HUC 8 watershed in the order of priority set out in Table 4 of the Kansas Unified Watershed Assessment. The watershed restoration and protection strategy will identify implementation projects for individual sub-watersheds and stream reaches within the HUC 8 watershed. The ***Nonpoint Source Coordinating Committee*** and ***consistency reviews*** will be used to encourage unified application of available federal, state, local and private sector resources to priority watersheds.

Are programs and activities of federal agencies consistent with the Kansas plan?

Consistency Reviews

Section 319 of the Clean Water Act requires the state identify federal development and assistance programs the state will review for consistency with the state's nonpoint source pollution management plan. Kansas will assure ***consistency*** in the following manner--

✓ Send selected federal agencies introductory letter describing expectations of the Kansas nonpoint source pollution management program.

✓ Review agencies current management practices

	✓ Identify opportunities for improved consistency ✓ Provide framed certificate of consistency when agency has achieved consistency. Where consistency cannot be established, KDHE will request the assistance of the U. S. Environmental Protection Agency Region VII.
How does KDHE assure EPA and other grant funds are effectively managed and administered?	Appendix L provides a description of the project tracking and management system KDHE will be using to assure that grant funds are expended in accordance with approved project work plans and grant agreements. To facilitate grant tracking and documentation of progress, KDHE will make extensive use of Internet technology including the EPA Grants Reporting and Tracking System (GRTS). KDHE will use GRTS to report project data, summaries and reports on projects funded with Section 319 Grants.
Is the Kansas plan periodically reviewed and updated?	The Kansas plan will be reviewed on an annual basis. The review will address programmatic goals and objectives as well as water quality protection goals. Recommendations for revisions or additions will be determined at the February coordinating committee meeting. In addition to the annual review, a critical review and evaluation will be performed at five year intervals to assess the likelihood the plan's goals will be achieved.
How can I keep track of progress?	To provide convenient public access to Kansas nonpoint source pollution control accomplishment, KDHE will make extensive use of Internet technology to post project completion reports, progress report summaries, etc. Paper copies will also be available on a request basis. Individuals wishing to provide comment and input into the nonpoint pollution control effort will be encouraged to attend an Advisory Committee meeting. Oral and written comments and recommendations will be welcomed at any time.
How will Kansas assure that "new" nonpoint sources of pollutants will	Kansas will rely on "water quality certifications" and "information and education" strategies to assure that "new" nonpoint pollutant sources will not adversely impact Kansas' water resources. New nonpoint pollutant sources include hydrologic modifications such as conversion of landscapes of trees, forest and grass to cropland or impervious surfaces

not adversely impact Kansas water resources?	or cropland to impervious surfaces and stream channel modifications. Appendix P – Table P-1 provides detailed information on procedures we will follow to assure these new sources protect Kansas water resources. In Kansas, stream channel modifications such as straightening or placing obstructions in stream channels are subject to Kansas permitting requirements and the Kansas Environmental Coordination Act (administered by the Kansas Department of Agriculture - Division of Water Resources) as well as Clean Water Act Section 404 dredge and fill permits administered by the U.S. Army Corps of Engineers. These permitted activities are subject to the water quality certification requirements of the Kansas Water Quality Standards. For these activities, the water quality certification will be developed around the objective of achieving no increase in the discharge of pollutants from the site of the proposed activity. Other land conversions such as changing permanently vegetated land surfaces to cropland or impervious surfaces are not subject to prior approval. For these circumstances, we have a goal of "no increase in the discharge of pollutants from the changed land cover". We will rely on information and education activities to assure that individuals considering such land cover changes are aware of the water quality impacts and means of avoiding such impacts. Priority of effort will be directed to high quality waters, waters designated for special aquatic life support, exceptional state waters and outstanding national resource waters. Appendix P– Table P-2 provides a list of these water bodies. Kansas water bodies with these designations are listed in the ***Kansas Surface Water Register***. The complete register is available from KDHE or via KDHE's web site at http://www.kdhe.state.ks.us/pdf/befs/register99.pdf
What is a *high quality water*?	High quality waters are water bodies which have water quality that is better than that described by the criteria of water quality standards. EPA refers to these as **"Tier 2 waters"**.

What is a *special aquatic life support water*?	The Kansas Water Quality Standards at KAR 28-16-28d(a)(2)(A) define a ***special aquatic life support water*** as a water body that contains combinations of habitat types and indigenous biota not commonly found in the state, or surface waters that contain representative populations of threatened or endangered species.
What is an *exceptional state water*?	The Kansas Water Quality Standards at KAR 28-16-28b(w) define ***exceptional state waters*** as water bodies that are of remarkable quality or of significant recreational or ecological value.
What is an *outstanding national resource water*?	The Kansas Water Quality Standards at KAR 28-16-28b(mm) define ***outstanding national resource waters*** as water bodies having extraordinary recreation or ecological significance.
What are the Nine Key Elements?	The **Nine Key Elements** are criteria for defining effective state nonpoint source programs. The Nine Key Elements (see Appendix O for detailed description of each element) characterize an effective and dynamic state nonpoint source program. The Nine Key Elements are the result of a collaborative effort of the states acting through the Association of State and Interstate Water Pollution Control Administrators and the U.S. Environmental Protection Agency. Appendix T provides and index to the ways and means that Kansas is addressing the Nine Key Elements.

	Nine Key Elements 1. Provide explicit short and long term goals and strategies 2. Provide strong collaborative partnerships among state, federal, local, tribal and the private sector. 3. Provide a balanced approach that emphasizes both statewide and watershed efforts. 4. Abate known water quality impairments and prevents pollution of unimpaired waters. 5. Identify impaired and threatened waters and establishes a process to progressively address these. 6. Address all components required by Section 319 of the Clean Water Act and expeditiously restore and protect water resources. 7. Identify Federal lands and activities which are not managed consistently with state nonpoint source program objectives. 8. Provide efficient and effective management and implementation of state program, including financial management. 9. Review, evaluate and update nonpoint source assessment and management program at least every five years.
What is the *State Water Plan?*	The *Kansas Water Plan* is a document prepared under the authority of State Water Resources Planning Act -- KSA 82a-901 to coordinate management, conservation and development of Kansas' water resources. The comprehensive ***State Water Plan*** is prepared annually. The State Water Resources Planning Act sets out nine state goals for water resources management. Two of these goals directly address water quality and water pollution control -- 1) ***"The protection and the improvement of the quality of the water supplies of the state"*** and 2) ***"The prevention of the pollution of the water supplies of the state"***. The *State Water Plan* consists of two sections – 1) a ***policy section*** and 2) a ***basin section***. The policy section addresses legislative policy issues and policy recommendations for statewide program application. The basin section deals with issues specific to each of Kansas' twelve river basins. Each river basin section contains guidelines and priorities for addressing specific basin concerns and issues. The *State Water Plan* is formulated through an established planning process lead by the Kansas Water Authority and the Kansas Water Office. The planning process

emphasizes public participation through basin advisory committees, public meetings and public hearings. Basin Advisory Committees are comprised of volunteer citizens living within on of Kansas' twelve river basins. Each committee has eleven members representing the public at large as well as municipal, domestic, irrigation, industrial and recreation water users. Committee members are appointed by the Kansas Water Authority from applications submitted by individuals interested in serving. The committees provide advice on formulation and implementation of the Basin Section of the *State Water Plan*.

The annual *State Water Plan* is coordinated among numerous local, state and federal agencies, special interest groups and the public. Issues are identified in July. Starting in October, with consultation of the basin advisory and technical advisory committees, a preliminary draft water plan is prepared for a January review by the Kansas Water Authority and release for public review. Public review through meetings and hearings occur in March through June. The Kansas Water Authority adopts a final *State Water Plan* in July. The recommended annual *State Water Plan* submitted to the Governor and Kansas Legislature in December.

The twenty-three member Kansas Water Authority includes as ex-officio members – Kansas Department of Health and Environment, State Conservation Commission, Kansas Department of Agriculture, Kansas Geological Survey, Kansas Agricultural Experiment Station-Kansas State University, Kansas Water Office, Kansas Department of Housing and Commerce, Kansas Department of Wildlife and Parks, Kansas Department of Agriculture - Division of Water Resource, and Kansas Corporation Commission are ex-officio member of the Kansas Water Authority and KDHE staff serve on applicable technical advisory committees. KDHE District staff attend Basin Advisory Committee meetings. The Water Quality Policy Section for the *State Fiscal Year 2002 Water Plan* provides KDHE the following guidelines for nonpoint source pollution –

✓ Use Sections 101(a)(7) and 319 of the federal Clean Water Act, KSA 75-5657 and the *Kansas Water Plan* as fundamental programmatic tools to achieve widespread use of nonpoint source pollution control measures in Kansas.

	✓ Use available state and federal funds to support staff and operations, demonstration projects, special investigations, grants to local governments to develop and implement local environmental protection plans, provide technical assistance, technology transfer, information and education and water quality monitoring and evaluation activities. ✓ Assist public and private sector organizations identify nonpoint source caused water pollution problems and develop water quality protection and restoration plans. ✓ Review nonpoint source pollution management plans prepared by county conservation district and others to assure consistency with the Kansas Nonpoint Source Pollution Management Plan. For more information about the Kansas Water Plan see http://www.kwo.org/kwp/main.html

Abbreviations used in this Document	
River Basins	CI - Cimarron KR - Kansas Lower Republican LA - Lower Arkansas MC - Marais Des Cygnes MO - Missouri NE - Neosho SO - Solomon SS - Smoky-Hill Saline UA - Upper Arkansas UR - Upper Republican VE - Verdigris WA - Walnut
K.S.A.	Kansas Statutes Annotated - Laws enacted by the Kansas Legislature
K.A.R.	Kansas Administrative Regulations - Rules and regulations adopted by Kansas' state agencies to administer and implement a statute enacted by the Kansas Legislature.